We claim:

1   1.   A method for implementing security management in
2   a storage area network including at least one storage
3   resource user, a resource provider, and resources
4   controlled by the resource provider, the method
5   comprising the steps of:

6   providing notification to the storage resource
7   user that a resource provider is available on the
8   storage area network;

9   requesting access to the resources by sending
10 identifying indicia from the storage resource user to
11 the resource provider, in response to receiving the
12 notification; and

13   examining a table of approved entities for the
14 identifying indicia to determine whether any resources
15 are available to the requesting storage resource user;

16   wherein, if the resources are determined to be
17 available to the storage resource user requesting
18 access to the resources, then allowing the storage
19 resource user to access the resources.

1   2.   The method of claim 1, wherein, if no the
2   resources are determined to be available to the
3   requesting storage resource user, then storing the
4   identifying indicia in a table of not-yet-approved
5   entities.

1   3.   The method of claim 1, wherein the resource provider
2   comprises an RAID controller.

1   4.   The method of claim 3, wherein the table of
2   approved entities is stored in non-volatile memory in
3   the controller.

20

1   5.   The method of claim 3, wherein a table of not-
2   yet-approved entities comprising a node World Wide
3   Name and a port World Wide Name for a plurality of
4   storage resource users is stored in volatile memory in
5   the controller.

1   6.   The method of claim 1, wherein the resources
2   comprise an array of data storage devices.

1   7.   The method of claim 1, wherein the identifying
2   indicia comprise a node World Wide Name and port World
3   Wide Name.

1   8.   The method of claim 1, further comprising the
2   steps of:

3   uploading a list of available resources from the
4   resource provider to a management station;

5   uploading the table of not-yet-approved entities
6   from the resource provider to the management station;

7   selecting a storage resource user identity from
8   the table of not-yet-approved entities;

9   selecting, from the list of available resources,
10 resources to be made available to the storage resource
11 user;

12   sending a list of the resources selected and
13 storage resource user identity to the resource
14 provider;

15   allocating, to the storage resource user, the
16 resources included in the list; and

17   presenting, to the storage resource user, the
18 resources allocated in the allocating step.

1   9.   The method of claim 8, further comprising the
2   steps of:

21

3   uploading the table of approved entities from the
4   resource provider; and

5   optionally selecting the storage resource user
6   identity from the table of approved entities instead
7   of from the table of not-yet-approved entities.

1   10. The method of claim 8, including storing the
2   resources to be made available to the storage resource
3   user in a LUN access map in the table of approved
4   entities.

1   11. The method of claim 10, wherein each command
2   received from the storage resource user is checked by the
3   controller against the LUN access map for authentication.

1   12. A method for implementing security management in
2   a storage area network including at least one storage
3   resource user, an data storage RAID controller, and a
4   data storage array coupled to the controller, the
5   method comprising the steps of:

6   granting access to data storage areas on disks in
7   the storage array to specific storage resource users
8   of the at least one storage resource user;

9   storing, in a table of approved entities in non-
10 volatile memory in the controller, indicia of data
11 storage areas on disks in the storage array accessible
12 to any storage resource user that has been granted
13 access to data storage areas on disks in the storage
14 array;

15   storing, in a table of not-yet-approved entities
16 in volatile memory in the controller, indicia of any
17 of the at least one storage resource user that have
18 not been granted access to data storage areas on disks
19 in the storage array;

22

20   requesting access to the areas by sending at
21 least the identifying indicia from the storage
22 resource user to the resource provider; and

23   examining the table of approved entities for the
24 identifying indicia to determine whether any of the
25 data storage areas are available to the requesting
26 storage resource user;

27   wherein, if the data storage areas are determined
28 to be available to the storage resource user
29 requesting access to the data storage areas, then
30 allowing the storage resource user to access the data
31 storage areas; otherwise, if no the data storage areas
32 are determined to be available to the requesting
33 storage resource user, then storing the identifying
34 indicia in the table of not-yet-approved entities.

1 13. The method of claim 12, wherein the indicia
2 comprise the node World Wide Name and port World Wide
3 Name for the storage resource user.

1 14. The method of claim 12, including the step of
2 providing notification to the storage resource user
3 that a resource is available on the storage area
4 network.

1 15. The method of claim 12, including the steps of:

2   uploading a list of available data storage areas
3 from the controller to a management station;

4   uploading the table of not-yet-approved entities
5 from the controller;

6   selecting the identifying indicia corresponding
7 to a storage resource user, from the table of not-yet-
8 approved entities;

9   selecting, from the list of available data
10 storage areas, the data storage areas to be made
11 available to the storage resource user;

12   sending association information to the
13 controller, the association information including a
14 list of the data storage areas to be made available to
15 the storage resource user and the identifying indicia
16 corresponding to a storage resource user; and

17   allocating, to the storage resource user, the
18 data storage areas included in the association
19 information.

1 16. The method of claim 12, wherein the data storage
2 areas comprise logical units.

1 17. The method of claim 16, including storing the
2 data storage areas to be made available to the storage
3 resource user in a LUN access map in the table of
4 approved entities.

1 18. The method of claim 17, wherein each command
2 received from the storage resource user is checked by
3 the controller against the LUN access map for
4 authentication.

1 19. A system for implementing security management in
2 a storage area network including at least one storage
3 resource user, a resource provider, and resources
4 controlled by the resource provider, the system
5 comprising:

6   a first table of approved entities for storing,
7 in memory in the controller, indicia of data storage
8 areas on disks in the storage array and the storage
9 resource user to which the areas are accessible; and

10   a second table of not-yet-approved entities for
11 storing, in memory in the controller, indicia

24

12 identifying indicia for storage resource user entities
13 that are presently not allowed access to any resources
14 on the storage area network;

15   wherein the storage resource user is allowed to
16 access the specific logical units included in the
17 indicia of data storage areas on disks in the storage
18 array, if the indicia in the first table corresponds
19 to identifying indicia provided by the storage
20 resource user.

1   20. The system of claim 19, wherein the first table
2   includes a LUN access map for storing indicia of
3   specific logical units on the data storage areas, and
4   indicia of the storage resource user to which the
5   specific logical units are accessible.

25